

WHAT IS CLAIMED IS:

1. A method for manufacturing an electron emission element comprising between its electrodes a conductive film having an electron emission section,
5 the method comprising the steps of
forming a gap in the conductive film located between the electrodes, and
applying a voltage between the electrodes in an atmosphere that has an aromatic compound with a
10 polarity or a polar group and in which the partial pressure ratio of water to the aromatic compound is 100 or less.
- 15 2. The method for manufacturing an electron emission element according to claim 1 wherein the partial pressure ratio of water to said aromatic compound is 10 or less.
- 20 3. The method for manufacturing an electron emission element according to claim 1 wherein the partial pressure ratio of water to said aromatic compound is 0.1 or less.
- 25 4. The method for manufacturing an electron emission element according to claim 1 wherein the partial pressure ratio of water to said aromatic compound is 0.001 or less.

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5. The method for manufacturing an electron emission element according to any one of claim 1 to 4 wherein said aromatic compound has a cyano group.

5 6. The method for manufacturing an electron
emission element according to any one of claim 1 to 4
wherein said aromatic compound is benzonitrile or p-
tolunitrile.

10 7. The method for manufacturing an electron
emission element comprising between its electrodes a
conductive film having an electron emission section,
the method comprising the steps of

15 forming a gap in the conductive film located
between the electrodes, and

 applying a voltage between the electrodes in an
atmosphere of an aromatic compound that has a polarity
or a polar group and from which moisture has been
removed.

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8. The method for manufacturing an electron emission element according to claim 7 wherein said aromatic compound has a cyano group.

25 9. The method for manufacturing an electron
emission element according to claim 7 wherein said
aromatic compound is benzonitrile or p-tolunitrile.

10. A method for manufacturing an electron emission element comprising between its electrodes a conductive film having an electron emission section, the method comprising the steps of

5 forming a gap in the conductive film located
between the electrodes, and

applying a voltage between the electrodes in a chamber from which moisture has been removed, in an atmosphere of an aromatic compound having a polarity or a polar group.

10 a polar group.

11. The method for manufacturing an electron emission element according to claim 10 wherein said aromatic compound has a cyano group.

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12. The method for manufacturing an electron emission element according to claim 10 wherein said aromatic compound is benzonitrile or p-tolunitrile.

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13. The method for manufacturing an electron emission element according to any of claims 1 to 12 wherein said electron emission element is a surface conduction electron emission element.

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14. The method for manufacturing an electron source comprising a substrate and a plurality of electron emission elements arranged thereon wherein

said electron emission elements are manufactured using
a method according to any of claims 1 to 13.

15. The method for manufacturing an image forming
5 apparatus comprising an electron source including a
substrate and a plurality of electron emission elements
arranged thereon; and an image forming member for
forming images using electron irradiation from the
electron source wherein said electron emission elements
10 are manufactured using a method according to any of
claims 1 to 13.

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